REDESCRIPTION OF THE MYSID CRUSTACEAN, *NOTOMYSIS AUSTRALIENSIS* (TATTERSALL) COMB. NOV.: REPRESENTATIVE OF A NEW GENUS

by

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ABSTRACT

WITTMANN, K. J. 1986. Redescription of the mysid crustacean, *Notomysis australiensis* (Tattersall) comb. nov.: representative of a new genus. *Rec. S. Aust. Mus.* 19(10): 139-143.

Distinctive features of the mouth-parts and ventral setae on the telson necessitate the establishment of a new genus, *Notomysis*, for *Leptomysis australiensis* Tattersall.

INTRODUCTION

While preparing a revision of the genus *Leptomysis* it became obvious that *L. australiensis* Tattersall has several characters which are not found in any other known species. Tattersall's (1927) description was based on material collected by H. M. Hale in late 1926 in Gulf St Vincent, South Australia. No other *Leptomysis* species has been found in Australian waters since then. In his description Tattersall states: "This is a characteristic species of the genus . . ."; however, he gives no description of the mandibles and maxillae which are crucial taxonomic characters at the species and genus level.

The doubtful status of the species made it necessary to examine the type material which is kept at the South Australian Museum (Reg. No. C. 1617). The material, labelled as syntypes, comprises five adult and three subadult females, seven adult males, and several parts of animals. A male with a body length of 9 mm was chosen as lectotype, dissected completely, and mounted in Swan medium on slides. Seven further specimens collected by H. M. Hale in 1925 at the same location, not labelled as syntypes, are in the Tattersall collection, British Museum (Natural History) (Reg. Nos 1964.1.21: 2257-2275). The examination revealed that the description given by Tattersall (1927) is somewhat incomplete; also there are several conflicting points concerning features common to all specimens studied: the eyes are much smaller; the exopod of the fourth male pleopod has four instead of five large modified setae; the dactylus of the third to eighth thoracic endopods is much smaller than described; and the telson bears setae and has a minute apical incision. These findings show that a redescription is necessary. From the following description of mouth-parts and telson it becomes clear that the species cannot remain in the genus *Leptomysis* but should be placed in a new genus.

Notomysis nov. gen.

Diagnosis: Mysidae, Leptomysini with eyes normal. In addition to the usual sexual dimorphism of the antennula the males are characterized by a hairy rounded organ located dorsally at the distal segment of the sympod. Antennal scale setose all around, with small terminal joint. Labrum normal, without spiniform process. Mandible with processus molaris reduced, palpus normal. Maxillula with endite small, distal joint slender. Maxilla with exopod normal, endopod without spines, proximal endite as broad as other 2 endites combined. First thoracic endopod without endites, ischium distinct but very short. Third to eighth thoracic endopod with carpopropodus 3-segmented by transverse articulations. Female with 3 pairs of oostegites. Pleopods of female represented by simple setose plates. Pleopods of male all biramous, well segmented except first endopod; fourth exopod with a total of 4 large modified setae on distal 3 segments. Endopod of uropod with spines on inner margin. Exopod without distal joint and without spines. Telson with numerous setae ventrally, minute apical incision, and spines on lateral margins.

Type-species: Leptomysis australiensis Tattersall.

Etymology: From the Greek term '*nōtos*' (=south).

Relationships: The genus *Notomysis* is closely allied to the genus *Promysis, sensu* Ii (1964), with which it shares features of the antennae, mouth-parts, thoracopods, and pleopods. Maxilla, maxillula, mandible, and first maxilliped are unlike *Leptomysis* but clearly belong to the type represented by the genera *Promysis* and *Prionomysis*. The new genus is distinguished from these and all other genera of the family Mysidae by the unique structure of the telson.

Notomysis australiensis (Tattersall) comb. nov.
(Figs 1-26)

Diagnosis: Middle segment of antennular peduncle with strong modified seta directed laterad. Inner margin of endopod of uropod with 16-28 spines increasing in length distally; 11-22 of these spines irregularly arranged on statocyst; 5-7 spines linearly arranged distal to statocyst. Telson with about 45-60 closely set spines on each lateral margin; apex with minute narrow incision about ¼ length of telson. Ventrally telson bears 8-12 plumose setae on

longitudinal ridge running half-way between centre and tip.

Description: General body proportions slender, closely similar to *Prionomysis aspera* Ii. A further coincidence with this species is that body and appendages are densely covered with small cuticle structures (Fig. 5). These are of about cylindrical shape on the carapace, body trunk, eye-stalks, and bases of appendages. Towards tips of appendages they tend to become acute and scale-like (Figs 3, 14, 19, 21, 23). Carapace with a transverse straight row of *ca* 13 pores in median position a short distance anterior to cervical suleus; a further row of *ca* 27 pores at the cardial suleus and a larger pore surrounded by 7 smaller ones a short distance anterior to the rounded posterior margin of carapace. Rostrum large, longer than distal segment of the antennular pedunele. Eyes as in Fig. 1. Last abdominal somite terminally produced into 2 strong spiniform projections on each lateral margin.

Mouth-parts: Frontal border of labrum bluntly rounded. Mandibles with processus molaris reduced to two lobes, masticatory lamellae completely lacking. Teeth of pars incisivus and lacinia mobilis larger on left than on right mandible. Left pars incisivus with 3 large and 3-4 smaller teeth, with the size decreasing proximally. Right pars incisivus distally with one large tooth flanked on each side, rostrally and caudally, by one masticatory plate carrying several small teeth. Left lacinia mobilis with 5-6, right one with about 4 teeth of varying size. Each pars centralis (=spine row) with 4-5 teeth of about equal size. Left mandible only densely covered with bristles on caudal face in region of lacinia mobilis and pars centralis. Palpus with unusually dense setation. Maxillula as is typical of *Mysidopsis* and *Promysis*, distal joint without array of pores found in *Leptomysis*. Maxilla essentially as figured by Ii (1964) for *Promysis orientalis* Dana.

Thoracopods: First exopod with 9 segments, second to seventh with 10, eighth with 9-10. Proximal segment flanked by large intersegmental joints; acutely pointed at laterodistal corner; small plumose seta usually present close to this corner. Epipodite 1 linguiform, without seta. First and second endopod like those in *Promysis*. Merus of first endopod without array of pores that occurs in *Leptomysis*; propodus and dactylus without spines except a strong nail at apex of dactylus. Carpopropodus of third to eighth endopod with 3 short joints; dactylus minute with slender nail. First pair of oostegites reduced, but larger than usual in Mysidae, with same basic setation pattern as in second pair (Figs 17, 18). Penis short, with about 11 smooth, curved setae around ejaculatory opening, and a series of plumose setae along outer margin.

Pleopods: In females all 5 pairs represented by simple setose rods increasing in length caudally. In sub-basal position each bears a more or less indistinct apophysis directed laterad. All features of male pleopods essentially as in *Promysis orientalis, sensu* Ii (1964). First to fifth endopod with 1, 9, 9, 9, and 8-9 joints, respectively. Basal joints each with a well-developed apophysis which is slender in first endopod, but rounded, plate-like in second to fifth. Basal segment of fifth endopod with small additional apophysis. First to fifth exopod with 8, 9, 10, 11-12, and 9-10 joints, respectively. Fourth exopod with large modified setae on last 3 joints. Antepenultimate and penultimate segment each with one large modified seta and an additional small smooth seta. Distal segment minute, with 2 less powerful modified setae.

Uropods: Exopod setose all around, 1.6 times as long as telson, or 1.5 times endopod. Endopod with spiniform projection dorsally at statocyst. Distance between apical spine at inner margin and tip is 25-30% length of endopod.

Nauplioid stage: Antennula distally with acute scales arranged in comb-like units. Antenna and mandible smooth. Abdomen covered with small hairs.

Length: Measured from rostrum to tip of telson excluding spines. Length is 8-13 mm in adult females (n=8) and 7-11 mm in adult males (n=9). Mean egg diameter is 0.49 mm (n=4).

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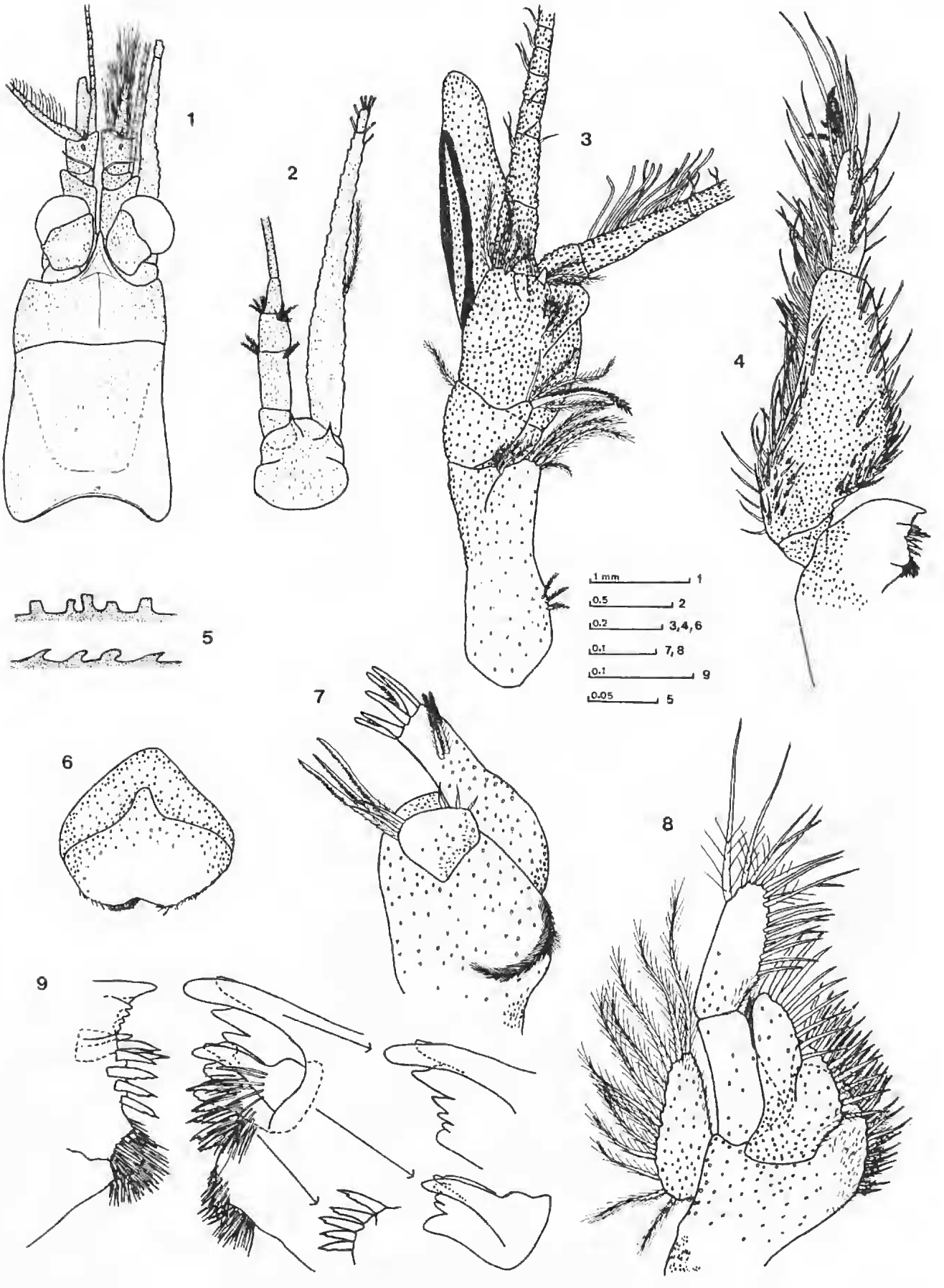
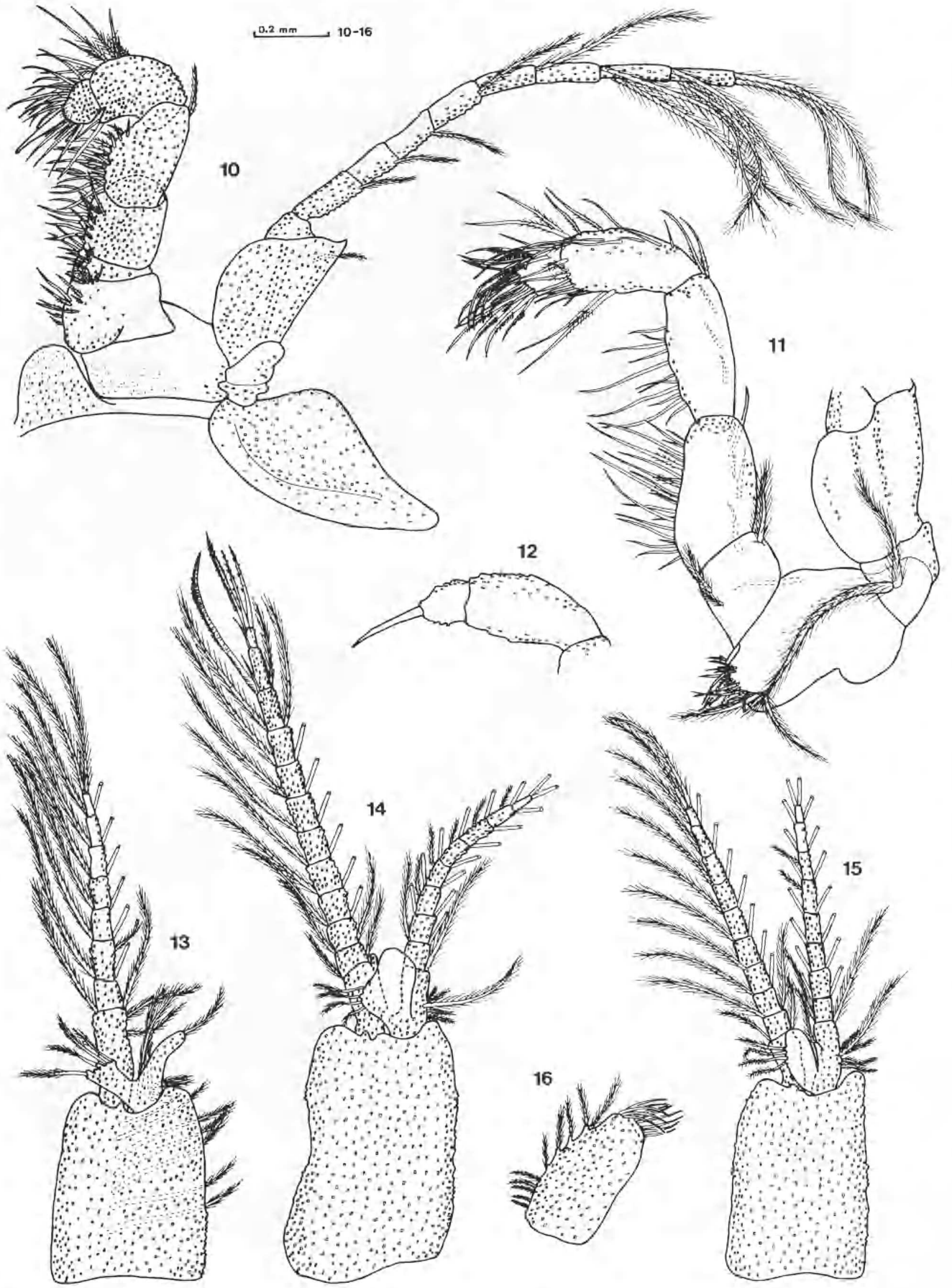
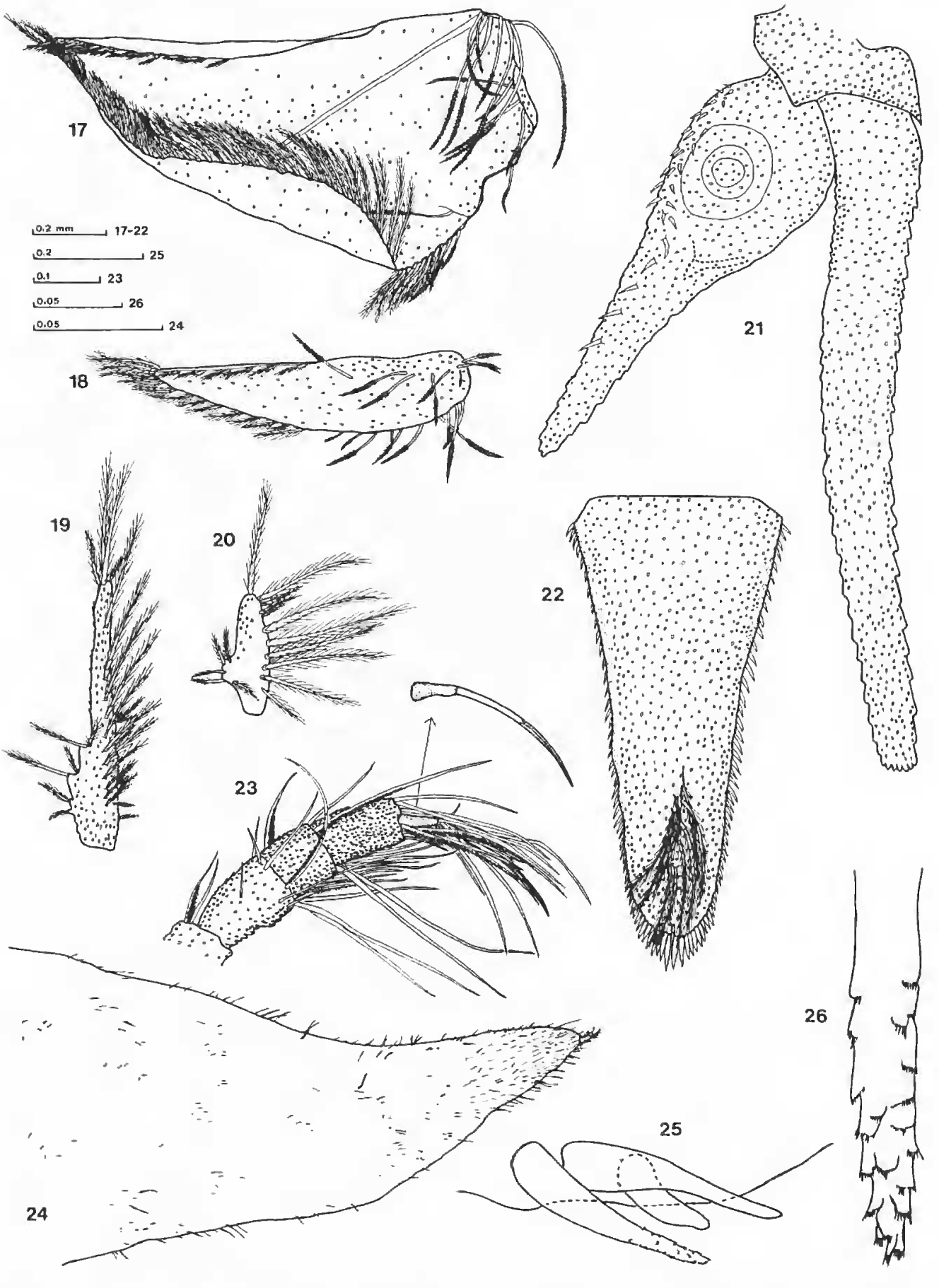


FIGS 1-9. *Notomysis australiensis* (Tattersall), Lectotype, ♂ 9 mm. 1. Anterior body region, dorsal view. 2. Antenna, ventral view. 3. Antennula, dorsal view. 4. Right mandible, caudal view. 5. Examples of cuticle structures, schematically. 6. Labrum, ventral view. 7. Maxillula, caudal view. 8. Maxilla, caudal view. 9. Masticatory margins of mandibles, caudal view; details show dentation of pars incisivus, lacinia mobilis, and pars centralis of left mandible.



FIGS 10-16. *Notomysis australiensis* (Tattersall), Lectotype, ♂ 9 mm. 10. First thoracic sternite with appendage, caudal view. 11. Second thoracic appendage, rostral view. 12. Distal portion of second thoracic appendage, setae omitted. 13-15. First, fourth, and fifth pleopod, caudal view. 16. Penis.



FIGS 17-26. *Notomysis australiensis* (Tattersall). 17-20. ♀ 9 mm. 17. Second oostegite, inner face. 18. First oostegite, inner face. 19. Fifth pleopod, rostral view. 20. First pleopod, rostral view. 21, 22, Lectotype, ♂ 9 mm. 21. Uropods, ventral view. 22. Telson, ventral view. 23. ♂ 8 mm, 'tarsus' of third thoracic endopod, detail shows dactylus with nail. 24-26. Nauplioid larva, lateral views. 24. Distal portion of abdomen. 25. Nauplius appendages. 26. Distal portion of antennula.